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10/693,314

10/24/2003

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06/07/2006

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EXAMINER

BIBBINS, LATANYA

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/693,314 | <b>Applicant(s)</b><br>HORAI ET AL. |  |
|                              | <b>Examiner</b><br>LaTanya Bibbins   | <b>Art Unit</b><br>2633             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 1,7,9 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>October 24, 2003</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

The abstract of the disclosure is objected to because it is longer than a single paragraph and exceeds 150 words. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Further, lines 12 and 13 of the abstract read "the levels of the recording power Pw and the intermediate power **Pw**." For the purpose of compact prosecution, the examiner will assume that applicant intends lines 12 and 13 of the abstract to read "the levels of the recording power Pw and the intermediate power **Pm**," and will prosecute the application accordingly.

***Claim Objections***

Claims 1, 7, and 9 are objected to because of the following informalities: claims 1, 7, and 9 read “the levels of the recording power  $P_w$  and the intermediate power  **$P_w$** .” For the purpose of compact prosecution, the examiner will assume that applicant intends claims 1, 7, and 9 to read “the levels of the recording power  $P_w$  and the intermediate power  **$P_m$** ,” and will prosecute the application accordingly. Appropriate correction is required.

Claim 10 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form. Independent claim 9 recites “the levels of the recording power  $P_w$  and the intermediate power  $P_m$  **being set** to satisfy  $1.7T \leq t_{top2}$  and  $1.4 \leq P_w/P_m$ ” while dependent claim 10 recites “the levels of the recording power  $P_w$  and the intermediate power  $P_m$  **are set** to satisfy  $1.7T \leq t_{top2}$  and  $1.4 \leq P_w/P_m$ .” The terminology “are set” used in dependent claim 10 is considered to be equivalent to “being set” which is used in claim 9 and therefore does not further limit the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 through 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Shirota et al. (US PGPub 2003/0067857 A1).

Claim 1 recites a data recording method of modulating the power of a laser beam in accordance with a pulse pattern, projecting the laser beam onto a write-once type optical recording medium, and recording data in the write-once type optical recording medium. The power of the laser beam is set to a recording power  $P_w$  within a first period and a second period and set to an intermediate power  $P_m$ , lower than the recording power, within a third period provided between the first and second periods.

The length of the first period and the levels of  $P_w$  and  $P_m$  satisfy  $1.7T \leq t_{top2}$  and  $1.4 \leq P_w/P_m \leq 1.62$ , where  $T$  is the period of a reference pulse and  $t_{top2}$  is the length of the first period. Shirota discloses an information recording method of generating a recording pulse signal and irradiating a laser beam on a recording medium, wherein the recording pulse signal includes a mark period in which a recording mark is formed. The mark period includes a top pulse period having a first recording power and an

Art Unit: 2633

intermediate bias period having a second recording power that is lower than the first recording power (see paragraph [0028]). The length of the top pulse,  $T_{top}$ , is defined in paragraph [0120] as  $1.75T$ . In paragraph [0027] Shiota discloses the relationship between the first and second recording powers where the first recording power is in the range of 120% to 185% of the second recording power. In the description of the preferred embodiments, paragraph [0053], Shiota further discloses various types of optical disks to be used, including CD-R and DVD-R types, which record information only once.

Claim 2 is drawn to the method of claim 1 where the length of the first period satisfies  $1.7T \leq t_{top} \leq 2.0T$  and the recording and intermediate powers satisfy  $1.4 \leq P_w/P_m \leq 1.62$ . Shiota clearly discloses the length of the top pulse,  $T_{top}$ , equal to  $1.75T$  in paragraph [0120] and the relationship between the first and second recording powers where the first recording power is in the range of 120% to 185% of the second recording power in paragraph [0027].

Claim 3 is drawn to the recording method of claim 1 where the linear recording velocity is greater than or equal to 14m/s during recording in the write-once type optical recording medium. Paragraph [0019] of the disclosure states "a linear recording velocity equal to or higher than 14 m/s, which corresponds to the 4x speed of the DVD-R." In paragraph [0088] of the reference, Shiota states that Figure 6 shows examples of a recording pulse-waveform for high-speed recording, which is four times faster than the normal recording speed. Since Shiota's invention relates to DVD's and high-speed recording, the normal speed is interpreted as the speed DVD-R's and DVD-RW's

Claim 4 is drawn to the method of claim 2 where the linear recording velocity is greater than or equal to 14m/s during recording in write-once type optical recording medium. In paragraph [0088] of the reference, Shiota states that Figure 6 shows examples of a recording pulse-waveform for high-speed recording, which is four times faster than the normal recording speed. Since Shiota's invention relates to DVD's and high-speed recording, the normal speed is interpreted as the speed DVD-R's and DVD-RW's.

Claim 5 is drawn to the method of claim 1 where record marks (including 5T) are formed in the write-once type optical recording medium. Shiota discloses a recording method as described above where 5T to 14T marks are formed (see Figure 6).

Claim 6 is drawn to the method of claim 2 where record marks (including 5T) are formed in the write-once type optical recording medium. Shiota discloses a recording method as described above where 5T to 14T marks are formed (see Figure 6).

Claims 7 and 8 are drawn to the apparatus corresponding to the method of using the same as claimed in claims 1 and 2 respectively. Therefore apparatus claims 7 and 8 correspond to method claims 1 and 2, and are rejected for the same reasons of anticipation stated above.

Claim 9 recites a write-once type optical recording medium where data can be recorded by modulating the power of a laser beam in accordance with a pulse pattern, projecting the laser beam onto a write-once type optical recording medium and recording data in the write-once type optical recording medium. The power of the laser beam is set to a recording power  $P_w$  within a first period and a second period and set to

Art Unit: 2633

an intermediate power  $P_m$ , lower than the recording power, within a third period provided between the first and second periods. The length of the first period and the levels of  $P_w$  and  $P_m$  satisfy  $1.7T \leq t_{top2}$  and  $1.4 \leq P_w/P_m \leq 1.62$  where  $T$  is the period of a reference pulse and  $t_{top2}$  is the length of the first period. Claim 9 is drawn to the write once optical recording medium corresponding to the method of claim 1. Therefore claim 9 is rejected for the same reasons of anticipation as used in claim 1 above.

Claim 10 is drawn to the write-once type optical recording medium of claim 9 where the length of the first period satisfies  $1.7T \leq t_{top2}$  and the recording and intermediate powers satisfy  $1.4 \leq P_w/P_m$ . Claim 10 does not further limit claim 9 and is therefore rejected for the same reasons of anticipation as used in claim 9.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirota et al. (US PGPub 2003/0067857 A1) as applied to claims 1 through 10 above, and further in view of Usami et al. (US PGPub 2003/0169679 A1).



Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claims 11 and 12 are drawn to a write once type optical recording medium and include a light transmittable substrate, a dummy substrate, and a recording layer containing organic dye, provided between the light transmittable substrate and the dummy substrate. Shirota does not teach a write once type optical recording medium with a light transmittable substrate, dummy substrate and recording layer containing organic dye provided between the light transmittable and dummy substrates. However, Usami et al. teaches an optical recording medium formed by stacking a recording layer and a protective layer or dummy substrate onto a substrate (refer to Figure 3). Usami discloses that the substrate layer can be formed of light transmittable materials such as polycarbonate and epoxy resins (see paragraph [0051]). Usami also discloses dyes to be used in the recording layer such as cyanine dye (an organic dye) in paragraph [0064].

It is apparent that one of ordinary skill in the art, at the time the invention was made, would have been motivated to combine the teachings of Shirota with Usami and would have had a reasonable expectation in producing the claimed invention because Shirota and Usami teach analogous art. Specifically, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to use the optical recording medium described by Usami. Usami provides motivation in paragraph [0011] by stating the stable recording and reproducing characteristics of the optical recording

Art Unit: 2633

medium. Therefore the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, absent unexpected results to the contrary.

Claim 12 is drawn to the write once type optical recording medium of claim 10 and includes a light transmittable substrate, a dummy substrate, and a recording layer provided between the light transmittable substrate and the dummy substrate containing an organic dye. Claim 12 is rejected for the same reasons of obviousness as used in claim 11 above.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaTanya Bibbins whose telephone number is (571) 270-1125. The examiner can normally be reached on Monday through Friday 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shanon Foley can be reached on 571 272-0898. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

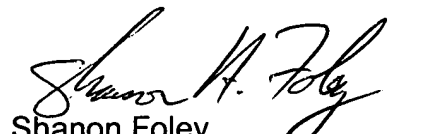
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Art Unit: 2633

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LaTanya Bibbins  
Patent Examiner



Shanon Foley  
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